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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,924

10/21/2005

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WAS0729PUSA

1227

22045 7590 11/20/2008

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EXAMINER

NGUYEN, VU ANH

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

11/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,924	Applicant(s) BACHER ET AL.	
	Examiner Vu Nguyen	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11, 12, 14, 15 and 18-26 is/are rejected.
- 7) ☒ Claim(s) 13, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 11, 12, 14, 15, and 18-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quintens et al. (EP 1,127,706) in view of Dragon et al. (US 6,075,075).

4. Regarding the limitations set forth in these claims, Quintens et al. (Quintens, hereafter) teaches a process for coating an inkjet receiving layer comprising applying a coating prepared from silane-containing PVA and a film-forming polymer (Abstract). The silane-containing PVA includes Kuraray Poval R-1130, R-2105, and R-3109 (Table 1), which are pulverulent (See attached product specifications) and have a degree of hydrolysis of 98-99% (Table 1). The film-forming polymer includes conjugated diene

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polymers, homopolymer and copolymers of (meth)acrylic acid esters, and others [0031].

The silane-containing PVA is prepared by partial or full hydrolysis of vinyl acetate copolymers [0026]. The film-forming binder comprises polymers having a T_g lower than 20°C and includes the polymers recited in claims 14 and 15 such as vinylacetate-acrylate copolymers and vinylacetate-maleate copolymers [0029-0031]. The preferred film-forming binder is a latex [0032-0033]. The disclosed coating composition comprises 30-60 wt% of the silane-containing PVA [0028] and 5-20 wt% of the film-forming polymer [0034]. The support onto which the ink receiving is coated includes the materials recited in claim 19 [0049]. The coating composition further comprises water, surfactants, fillers and pigments [0023] that include silica, clay, alumina, titanium oxide, calcium carbonate, and others [0022], and contains more than 30% by weight of solid content (See, for example, Sample 4 in Table 2 and [0056]). The surfactant includes cationic surfactants [0041]. The prior art also teaches inkjet recording materials comprising paper and polymer-coated substrate that are coated by the disclosed process ([0049], [0050], Examples, and Claims).

5. Clearly, Quintens teaches all the limitations set forth in these claims but fails to teach a film-forming binder which is a redispersible polymer powder.

6. Dragon et al. (Dragon, hereafter) teaches an aqueous polymer dispersion, wherein the polymer, in one embodiment, comprises 0-5 wt% (meth)acrylic acid or salts thereof, 0-5 wt% (meth)acrylamide, and 90-97.5 wt% of butadiene and styrene (col. 6, lines 30-40). The polymer has a T_g of 0-25°C and is made into redispersible polymer powder via drying (col. 9, lines 1-17). The dispersion and the powders are said to be

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suitable for use as binders for aqueous paper coating slips (col. 9, lines 65-67 & col. 10, lines 1-2). **[Motivations]** Dragon teaches that, aqueous polymer dispersions (i.e., lattices) are unstable (col. 2, lines 35-46). To stabilize the dispersions, protective colloids or emulsifiers are often added (col. 2, lines 47-63). However, protective colloids are costly and may interfere with the polymer in the dispersions (col. 2, lines 64-67 & col. 3, lines 1-5). Emulsifiers, on the other hand, tend to foam (col. 45-51). "The most advantageous application form of [latex] is therefore that of the polymer powder which is obtained starting from its very finely divided aqueous polymer dispersion by [spray] drying and is redispersible in an aqueous medium." (col. 2, lines 22-34). It is also disclosed that aqueous dispersions having a solids content of 35-70% can be prepared using the disclosed redispersible polymer powder (col. 8, lines 38-40).

7. On the other hand, it is clear from the Quintens disclosure that the coating compositions employing the film-forming lattices are not stable even when the solids content is only about 37% (Table 2). Yet, to obtain a coating with good properties [0009], the content of polymeric binder in the ink receiving layer is desired to be 30-60% relative to the total coating weight of the layer [0028]. From such drawback of using latex binders, from the benefits of using the redispersible polymer powder taught by Dragon, and considering that, from the teachings of Quintens, an inkjet ink receptive layer having a coating of high solids content has superior properties such as abrasion resistance, good ink absorption, and other properties taught by Quintens [0009], it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have replaced the latex binders taught by Quintens with the

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redispersible latex powders taught by Dragon so as to prepare coating compositions that are stable even at high solids concentration and, consequently, the resulting ink receiving layer, due to the high binder concentration, exhibits high ink absorption capability, high ink absorbing speed, high gloss, superior waterfastness, lightfastness, weatherability, and is resistant to smearing and feathering.

Allowable Subject Matter

8. Claims 13, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The silane-containing polyvinyl alcohols recited in claim 13 are not disclosed in any prior art of record. Quintens does disclose similar silane-containing polyvinyl alcohols in the form of the commercial products PovalR polymers available from Kuraray (Table 1). However, Kuraray does not disclose the mole percent of the silane-containing monomers in these polymers. The polymers recited in claim 13 are disclosed in an earlier application (see U.S. Pat. No. 7,052,773) filed by the same inventive entity. However, this document is not available as prior art against the instant claim. The method of coating an inkjet substrate recited in claims 16 and 17 is not disclosed in any references of record. A similar method is disclosed in U.S. Pat. 5,342,897 by Franzman et al., which teaches a method of making polymer powders by simultaneously spray-drying one aqueous polymer solution and one aqueous dispersion of a film-forming

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polymer (col. 3, lines 25-30). The obtained powders are redispersible and are used as binders in numerous coatings. However, Franzman et al. fails to teach an actual coating method where the same spray-drying method is employed along with one aqueous polymer solution and one aqueous polymer dispersion. A closely related method is disclosed in U.S. Pat. 4,783,375 by Hashimoto et al., which teaches a method of spray-drying an ink substrate coating composition to obtain a powder followed by electrostatic powder coating (col. 9, lines 60-68).

Response to Arguments

10. Applicant's arguments, see Remarks (pp. 2-3), filed 10/03/2008, with respect to the rejection(s) of claim(s) 11-12 and 14-26 under 35 U.S.C. 102(b) as anticipated by Quintens et al. (EP 1,127,706) have been fully considered and are persuasive.

Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection of claims 11-12, 14-15, and 18-26 is made in view of the newly found prior art reference Dragon et al. (US 6,075,075). The deficiency in Quintens, that is, a redispersible polymer powder, is remedied by Dragon as set forth above.

11. Applicant's arguments, see Remarks (p. 4), filed 10/03/2008, with respect to the rejection of claim 13 under 35 U.S.C. 103(a) over Quintens in view of Kuraray R-Polymer Technical Data Sheet have been fully considered and are persuasive. The rejection of claim 13 has been withdrawn.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Nguyen whose telephone number is (571)270-5454. The examiner can normally be reached on M-F 7:30-5:00 (Alternating Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vu Nguyen
Examiner
Art Unit 1796

/David Wu/
Supervisory Patent Examiner, Art Unit 1796